REMARKS

The Applicants respectfully request for further examination and consideration in view of the arguments set forth fully below. Claims 1, 3-8 and 10-43 were previously pending in this application. Within the Office Action, Claims 1, 3-8 and 10-43 have been rejected. Accordingly, Claims 1, 3-8 and 10-43 are currently pending.

Rejection Under 35 U.S.C § 102

Within the Office Action, Claims 1 and 40 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,587,453 to Romans et al. ("Romans"). Applicants respectfully disagree with this rejection. Romans teaches a method of communicating first and second data types. Romans teaches a medium access control protocol which enables a wireless network to carry both isochronous and asynchronous data traffic. [Romans, col. 1, lines 51-54] Romans teaches that a control point provides support for isochronous services. [Romans, col. 2, lines 24-25] Romans further teaches that an isochronous data terminal or a voice terminal only uses the time division multiple access mechanism in the contention-free period to communicate with a control point. [Romans, col. 2, lines 26-29] Romans does not teach a first type of device operating according to a first protocol and a second protocol **and** one or more of *a* ***second type of device*** *operating according to only the second protocol.* Romans also does not teach that the first protocol has priority over the second protocol.

Within the Office Action, it is argued that Romans does teach that the first protocol has priority over the second protocol. Within the Office Action, it is stated that, "Isochronous data has priority over Asynchronous data in that the transmission of Asynchronous data starts only after the complete transmission of Isochronous data." [Office Action, page 3] Furthermore, Column 2, lines 13-15 of Romans is cited as teaching this. However, Romans at Column 2, Lines 13-15 teaches, "[t]he contention period occupies the time remaining between the two contention-free periods." [Romans, Col. 2, Lines 13-15] Nothing in the cited section indicates that one protocol has priority over another. Column 3, lines 30-31 of Romans is also cited in reference to priority, but again there is nothing teaching priority of a first protocol over a second protocol. Romans at Column 3, Lines 30-31 teaches, "(Number of connections*2) * (SIFS+Duration of TDMA Voice Data message)." [Romans, Col. 3, Lines 30-31] Therefore, Romans does not teach every element of the claims and thus does not anticipate the claims.

In contrast to the teachings of Romans, the combined IEEE 1394-2000 and ethernet network of the present invention allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Alternatively, clocks at all nodes within the network are synchronized to start and stop the isochronous interval at the same time without the need for any one device to transmit the isotick signal. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, Romans does not teach that the first protocol has priority over the second protocol. As also described above, Romans does not teach *a **second type of device** operating according to only the second protocol.*

The independent Claim 1 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 1 comprises establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the first protocol during the first portion and allowing only transmissions according to the second protocol during the second portion, wherein the first protocol has priority over the second protocol. As described above, Romans does not teach that the first protocol has priority over the second protocol. As also described above, Romans does not teach *a **second type of device** operating according to only the second protocol.* For at least these reasons, the independent Claim 1 is allowable over the teachings of Romans.

The independent Claim 40 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to an isochronous protocol and an asynchronous protocol and one or more of a second type of device operating according to only the asynchronous protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 40 comprises

establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the isochronous protocol during the first portion and allowing only transmissions according to the asynchronous protocol during the second portion, wherein the isochronous protocol has priority over the asynchronous protocol. As described above, Romans does not teach that the isochronous protocol has priority over the asynchronous protocol. As also described above, Romans does not teach *a **second type of device** operating according to only the second protocol.* For at least these reasons, the independent Claim 40 is allowable over the teachings of Romans.

Rejection Under 35 U.S.C § 103

Within the Office Action, Claims 1, 3-5 and 7 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,141,355 to Palmer et al. ("Palmer") in view of U.S. Patent No. 6,651,128 to Gulick ("Gulick"). Applicants respectfully disagree with this rejection. Palmer teaches a network system for providing transmission of real-time data and non-real-time data between a plurality of network devices. Palmer also teaches synchronizing devices to a periodic time frame with two time intervals defined within each repeating frame period. During the first time interval, only isochronous traffic is transmitted, and during the second time interval, the devices function using only standard Ethernet. [Palmer, col. 4, lines 55-67] As recognized within the Office Action, Palmer does not teach that either time interval has priority over the other.

Gulick appears to be cited for the purpose of showing that the first protocol has priority over the second protocol. Applicants respectfully disagree with this rejection and the inclusion of Gulick. Again, the concepts of isochronous, asynchronous and priority have been confused within the Office Action to support this rejection.

In contrast to the teachings of Gulick, it is argued in the Office Action that the device adapter 2 of Palmer operates according to a first protocol (real-time isochronous protocol) and a second protocol (non-real time ethernet protocol) and the device adapter 3 of Palmer operates only according to the second protocol (non-real time ethernet protocol). If it is established in the citation of Palmer that the first protocol is the real-time isochronous protocol and the second protocol is the non-real time ethernet protocol, then this convention cannot be switched when applying the teachings of Gulick, which clearly teaches that asynchronous data (second protocol as established in the Office Action) has priority over isochronous data (first protocol as established in the Office Action). The teachings of Palmer and Gulick will just not support an

obviousness rejection of the presently claimed invention. If the first protocol is isochronous data and the second protocol is asynchronous data, as established in the citation of Palmer within the Office Action, then neither Palmer, Gulick nor their combination teaches that the first protocol has priority over the second protocol.

Within the Office Action, in the Response to Arguments section on Page 28, it is stated that Gulick clearly teaches the priority scheme of Claim 1 in Gulick, Column 6, lines 16-26 and Column 6, lines 56-67. Applicants respectfully disagree. As described above and immediately below, the combination of Palmer and Gulick does not teach the claimed invention. Specifically, Claim 1 is directed to "one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol". It is also specified in Claim 1 "wherein the first protocol has priority over the second protocol." Within the Office Action, it is stated that "Palmer discloses...a first type of device...operating according to a first protocol (Real-Time isochronous protocol...) and a second protocol (Non-Real Time Ethernet protocol because it supports element 100 NRTD (Non-Real Time Device)..." [Office Action, Page 5] Therefore, according to the Office Action, Palmer teaches the first device operates according to the isochronous protocol and the ethernet protocol. According to the Office Action, Palmer also teaches a second device operating according to the second protocol, (ethernet). Thus, according to the Office Action, the first protocol is isochronous and the second protocol is ethernet. Keeping in mind that Claim 1 includes the limitation "wherein the first protocol has priority over the second protocol," Gulick teaches "asynchronous data [second protocol]...has exclusive priority over the isochronous data [first protocol]..." [Gulick, Col. 6, lines 16-26] Therefore, the teachings of Palmer and Gulick conflict when attempting to combine the two to teach the present invention. According to the Office Action, Palmer teaches an isochronous first protocol, an ethernet second protocol and a second device operating according to the second protocol which is ethernet. According to the Office Action, Gulick teaches the asynchronous data (second protocol) having priority over the isochronous data (first protocol). Therefore, the combination of Palmer and Gulick would teach wherein the *second* protocol has priority over the *first* protocol, according to the Office Action. However, in contrast to this, it is claimed in Claim 1, wherein the *first* protocol has priority over the *second* protocol. Thus, the combination of Palmer and Gulick does not teach the claimed invention.

Applicants request this point be considered very carefully as it is the source of major confusion within the Office Action. As stated above a number of times, when combining the

references, Palmer and Gulick, certain variables such as first protocol, second protocol and second device become constants which cannot simply be changed again for the benefit of manufacturing a rejection of the present claims. In a very compact form, Palmer teaches: first protocol = isochronous, second protocol = ethernet , second device = ethernet. Gulick teaches asynchronous has priority over isochronous. Therefore putting those two sentences/equations together, Palmer and Gulick teach the second protocol has priority over the first protocol. However, the presently claimed invention claims the first protocol has priority over the second protocol.

Gulick also teaches, "asynchronous data in asynchronous queue 16 may be granted exclusive access to resource 12 when the NEED ISOCHRONOUS DATA signal is not generated or asserted, and isochronous data in isochronous queue 18 may be granted access to resource 12 when the NEED ISOCHRONOUS DATA signal is generated or asserted in order to maintain isochrony." [Gulick, Col. 6, Lines 54-60] Again, only asynchronous data is given priority, and in light of what Palmer teaches, the combination of Gulick and Palmer, does not teach the claimed invention. Gulick never teaches isochronous data having priority; specifically, Gulick only states, "isochronous data in isochronous queue 18 may be granted access..." but not exclusive or priority access. [Gulick, Col. 6, Lines 54-60] Therefore, as described above, the combination of Palmer and Gulick does not teach the claimed invention.

In contrast to the teachings of Palmer, Gulick and their combination, the combined IEEE 1394-2000 and ethernet network of the present invention allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Alternatively, clocks at all nodes within the network are synchronized to start and stop the isochronous interval at the same time without the need for any one device to transmit the isotick signal. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, if the first protocol is isochronous data and the second protocol is asynchronous data, as established

within the citation of Palmer within the Office Action, then neither Palmer, Gulick nor their combination teach that the first protocol has priority over the second protocol.

The independent Claim 1 is directed to a method of transmitting data within a network including one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol, wherein devices of the first type and devices of the second type communicate with each other within the network. The method of Claim 1 comprises establishing a periodic cycle including a first portion and a second portion, allowing only transmissions according to the first protocol during the first portion and allowing only transmissions according to the second protocol during the second portion, wherein the first protocol has priority over the second protocol. As described above, if the first protocol is isochronous data and the second protocol is asynchronous data, as established within the citation of Palmer within the Office Action, then neither Palmer, Gulick nor their combination teach that the first protocol has priority over the second protocol. For at least these reasons, the independent Claim 1 is allowable over the teachings of Palmer, Gulick and their combination.

Claims 3-5 and 7 are dependent on the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Palmer, Gulick and their combination. Accordingly, the Claims 3-5 and 7 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 6 and 41 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Gulick and further in view of U.S. Patent No. 6,324,178 to Lo et al. ("Lo"). The Applicants respectfully disagree.

Claim 6 is dependent on the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Palmer, Gulick and their combination. Accordingly, the Claim 6 is also allowable as being dependent on an allowable base claim.

Claim 41 is dependent on the independent Claim 40. As discussed above, the independent Claim 40 is allowable over the teachings of Palmer, Gulick and their combination. Accordingly, the Claim 41 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 8 and 10-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,747,979 to Banks et al. ("Banks") in view of Palmer and U.S. Patent No. 6,032,211 to Hewitt ("Hewitt"). The Applicants respectfully disagree. Banks teaches a method and apparatus for bridging between networks. As recognized within the Office Action, Banks does not teach a bridge or hub that is connected to and

communicating with a switch device. As described above, Palmer teaches a network system for providing transmission of real-time data and non-real-time data between a plurality of network devices. It is stated within the Office Action that Palmer teaches in Figures 2 and 6 a hub or bridge in the form of a Device Adapter with a third interface (network connection point 2) going to a switch (element 4 of Figures 2 and 6). The Applicants respectfully disagree. Palmer teaches that the "X-hub 4 is designed to replace and upgrade an Ethernet hub 3 as in FIG. 1, so the X-Hub 4 preferably provides the same electrical interface to Network Interface Points 2 as does an Ethernet hub 3." [Palmer, col. 9, lines 28-32] Palmer then teaches that "an X-Hub 4 allows concurrent transmissions through several Network Interface Points 2 without resulting collisions, provided that the X-Hub 4 is configured appropriately." [Palmer, col. 9, lines 33-36] Palmer does not teach a third interface configured for coupling to and communicating with a switching device.

Within the Advisory Action (point 7 on page 5), it is argued that "Palmer teaches a third interface configured for coupling to and communicating with the switching device. (See Figure 4A and Column 10, lines 35-45)" The Applicants respectfully disagree. According to the Office Action, the third interface is the Network connection point 2, and the X-Hub4 is the switch. Furthermore, as cited in the Office Action, Palmer teaches that "X-Hub 4 may be appropriately configured to directly route different signals to their destinations." [Palmer, col. 10, lines 36-39] Accordingly, what Palmer teaches is a configured switch (X-Hub4). Palmer does not teach a third interface configured for coupling to and communicating with the switching device.

Hewitt teaches a method of mode control in a bus optimized for personal computer data traffic. Hewitt focuses solely on a bus within a personal computer. Hewitt does not teach a third interface configured for coupling to and communicating with a switching device. Accordingly, neither Banks, Palmer, Hewitt nor their combination teach a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion.

Within the Office Action, in the Response to Arguments section on Page 30, it is stated that, "Hewitt clearly shows that the personal computer receives and transmits asynchronous and isochronous traffic in a network environment as can clearly be deduced from the description in Column 3:28-36..." [Office Action, Page 30] All that is included within the teachings of Hewitt at Column 3, lines 28-36 is a list of interface components including network connections. This is

simply a blanket paragraph describing just about any computing device produced during/after the Internet boom. There is nothing in Hewitt that teaches a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion.

Furthermore, there is no motivation to warrant the combination of Banks, Palmer and Hewitt. There is no hint, teaching or suggestion in any of Banks, Palmer and Hewitt to warrant their combination.

This is a classic case of impermissibly using hindsight to make a rejection based on obviousness. The Court of Appeals for the Federal Circuit has stated that "it is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." In Re Fritch, 972 F.2d, 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992). As recognized within the Office Action, Banks does not teach a bridge that is directly connected to an communicating with a switch device that sends a period signal, which starts the start of a period having a first portion and a second portion. It is also recognized within the Office Action that Banks does not teach a transmission scheme where periodic signals are sent to signal the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. Palmer teaches a network system for providing transmission of real-time data and non-real-time data between a plurality of network devices. Hewitt teaches a method of mode control in a bus optimized for personal computer data traffic. Within the Office Action, it is stated that

> [i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Banks' bridge to incorporate a transmission scheme to handle asynchronous and isochronous traffic. The motivation being given that asynchronous and isochronous traffics are the main type of traffics handled in home and small office networks having such a transmission scheme allows different devices to communicate in these types of networks efficiently with high QoS [Office Action, page 11].

It is only with the benefit of the present claims, as a "template" that there is any motivation to combine the method of mode control in a bus optimized for personal computer data traffic of Hewitt with the network system of Palmer and the network bridging apparatus of Banks. No

such motivation exists without the present claims. To conclude that the combination of Banks, Palmer and Hewitt is obvious, based on the teachings of these references, is to use hindsight based on the teachings of the present invention and to read much more into Banks, Palmer and Hewitt than their actual teachings. This is simply not permissible based on the directive from the Court of Appeals for the Federal Circuit.

It is well settled that to establish a *prima facie* case of obviousness, three basic criteria must be met:

1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
2) there must be a reasonable expectation of success; and
3) the prior art reference, or references, must teach or suggest all the claim limitations. MPEP § 2143.

The burden of establishing a *prima facie* case of obviousness based on the teachings of Banks, Palmer and Hewitt has not been met within the Office Action.

There is no motivation to combine the teachings of Hewitt with Banks and Palmer. Hewitt relates to a bus optimized for data traffic within a personal computer. Although Hewitt teaches network connections in a blanket paragraph, there is nothing in Hewitt to indicate a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. There is no hint, teaching or suggestion to motivate one skilled in the art to combine their teachings. It is only with the benefit of the presently claimed invention as a "template" that one would consider combining a bus optimized for personal computer data traffic with the networking system of Palmer and the network apparatus of Banks. As described above, Hewitt is focused on transferring data over a bus between two components within a personal computer. Hewitt never teaches anything, aside from including the phrase "network connections," regarding any data transfers beyond the personal computer itself. Therefore, Hewitt should not be combined with Banks and Palmer.

Even if considered proper, the combination of Banks, Palmer and Hewitt does not teach the presently claimed invention. In contrast to the teachings of Banks, Palmer, Hewitt and their combination, the combined IEEE 1394-2000 and ethernet network of the present invention

allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, neither Banks, Palmer, Hewitt, nor their combination teach a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion.

The independent Claim 8 is directed to a modified hub device configured for coupling between two or more devices operating according to two or more different protocols and a switching device, wherein devices of the first type and devices of the second type communicate with each other. The hub device of Claim 8 comprises a first interface configured for coupling to and communicating with one or more of a first type of device operating according to a first protocol and a second protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol and a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. As described above, the combination of Banks, Palmer and Hewitt is improper. Even if considered proper neither Banks, Palmer, Hewitt, nor their combination teach a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second

portion. For at least these reasons, the independent Claim 8 is allowable over the teachings of Banks, Palmer, Hewitt and their combination.

Claims 10-17 are dependent on the independent Claim 8. As discussed above, the independent Claim 8 is allowable over the teachings of Banks, Palmer, Hewitt and their combination. Accordingly, the Claims 10-17 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claim 18 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Banks in view of Palmer and Hewitt and further in view of U.S. Patent No. 6,772,267 to Thaler et al. ("Thaler"). Claim 18 is dependent on the independent Claim 8. As discussed above, the independent Claim 8 is allowable over the teachings of Banks, Palmer, Hewitt and their combination. Accordingly, the Claim 18 is also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 19-25 and 29-36 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Banks and Gulick. Applicants respectfully disagree with this rejection. Claims 19 and 29 each include the limitation, "wherein the first protocol has priority over the second protocol", and "signals the start of a period having a first portion and a second portion." As described above, neither Palmer, Gulick nor their combination teaches this limitation. Furthermore, Banks also does not teach this limitation. Accordingly, neither Palmer, Banks, Gulick nor their combination teach that the first protocol has priority over the second protocol.

Within the Office Action [Page 16], it is argued that Palmer teaches a transmission scheme (*a control circuit coupled to the plurality of ports for sending a periodic signal*) where periodic signals are sent to signal the start of a period having a first portion and a second portion. To support this argument, it is stated in the Office Action that Palmer shows "use of signaling protocol between the hubs (i.e. DAs) and the switch (i.e. X-hub) in Column 7:5-10 and further given the signaling protocol it is inherent for the switch (i.e. X-hub) to send signals to the DAs to indicate the start of a phrase or period.)" [Office Action, pages 16-17] The Applicants respectfully disagree. Palmer teaches that the "X-Hub may place each DA in the system in hub-tx mode throughout all phases. A DA may then 'initiate a call' by communicating via the CSMA/CD protocol, with the X-Hub." [Palmer, col. 7, lines 6-10] (i.e. Palmer teaches that the X-Hub only places each DA in the same mode, and then it is the DA (not the X-Hub) that calls in to initiate or start the inter-component communication.) Therefore, Palmer does not teach *a*

control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period as claimed by Applicants' Application.

The independent Claim 19 is directed to a switching device configured for coupling to two or more hub devices providing interfaces to one or more of a first type of device operating according to a first protocol and a second protocol and one or more of a second type of device operating according to only the second protocol. The switching device of Claim 19 comprises a plurality of ports, each port coupled to a corresponding hub device for interfacing with devices coupled to the corresponding hub device and a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion, wherein the first protocol has priority over the second protocol. As described above, neither Palmer, Banks, Gulick nor their combination teach that the first protocol has priority over the second protocol and a control circuit coupled to the plurality of ports for sending a periodic signal where periodic signals are sent to signal the start of a period. For at least these reasons, the independent Claim 19 is allowable over the teachings of Palmer, Banks, Gulick and their combination.

Claims 20-25 are dependent on the independent Claim 19. As discussed above, the independent Claim 19 is allowable over the teachings of Palmer, Banks, Gulick and their combination. Accordingly, the Claims 20-25 are all also allowable as being dependent on an allowable base claim.

The independent Claim 29 is directed to a network of devices comprising a switching device and a plurality of modified hub devices. The switching device of Claim 29 includes a plurality of ports and a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in a first protocol are allowed during the first portion and only communications in a second protocol are allowed during the second portion. The plurality of modified hub devices of Claim 29 each include a first interface configured for coupling to and communicating with one or more of a first type of device operating according to the first protocol and the second protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol wherein the first protocol has priority over the second protocol and a third interface coupled to a corresponding one of the plurality of ports. As described above, neither Palmer, Banks, Gulick nor their combination teach that the first protocol has priority over the second protocol and a control circuit coupled to

the plurality of ports for sending a periodic signal where periodic signals are sent to signal the start of a period. As described above, and as clear evidence that the prior art is being piece-meal combined to reject the claimed invention using what is taught in the claimed invention (which is improper), when combining Palmer, Banks and Gulick, the claimed invention is not achieved. What is achieved instead, is a combination where the second protocol has priority over the first protocol. For at least these reasons, the independent Claim 29 is allowable over the teachings of Palmer, Banks, Gulick and their combination.

Claims 30-36 are dependent on the independent Claim 29. As discussed above, the independent Claim 29 is allowable over the teachings of Palmer, Banks, Gulick and their combination. Accordingly, the Claims 30-36 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 26, 27, 37 and 38 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Banks and further in view of Hewitt. Claims 26 and 27 are dependent on the independent Claim 19. Claims 37 and 38 are dependent on the independent Claim 29. As discussed above, the independent Claims 19 and 29 are both allowable over the teachings of Palmer, Banks, Gulick and their combination. Accordingly, the Claims 26, 27, 37 and 38 are all also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 28 and 39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Palmer in view of Banks and further in view of Thaler. Claim 28 is dependent on the independent Claim 19. Claim 39 is dependent on the independent Claim 29. As discussed above, the independent Claims 19 and 29 are both allowable over the teachings of Palmer, Banks, Gulick and their combination. Accordingly, the Claims 28 and 39 are both also allowable as being dependent on an allowable base claim.

Within the Office Action, Claims 8 and 42 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,450,411 to Heil ("Heil") in view of U.S. Patent Publication No. 2004/0019731 to Brown ("Brown").

Heil teaches an ATM network which includes an isochronous and non-isochronous processors connected to an ATM network interface [Heil, Figures 2 and 3]. However, there is nothing in Heil that teaches a second interface configured for coupling to and communicating with one or more of a second type of device operating according to *only the second protocol*. Within the Office Action, it is stated that based on Figure 3, "a given device can have one type of processor as shown in Figure 3 and hence using either isochronous or non-isochronous protocol..." [Office Action, Page 24] However, Figure 3 of Heil only shows a group of 4

processors, two of which are isochronous and two are non-isochronous. There is nothing in Figure 3 to indicate that only one of the processors is able to be used alone. Furthermore, within the specification and claims, the processors are always disclosed as a group of isochronous and non-isochronous. Therefore, Heil clearly does not teach a second type of device operating according to only the second protocol. Furthermore, it is acknowledged within the Office Action, that Heil does not teach a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion.

Brown teaches a priority mechanism for scheduling isochronous and asynchronous transactions on a shared bus. [Brown, title] Brown also teaches:

> ...splitting an allocated shared bus time into frames of equal length. When a bus request is received the technique determines whether the bus request in a current frame is for an asynchronous transaction or an isochronous transaction. If an asynchronous transaction bus request exists it is processed, otherwise an isochronous transaction bus request is processed. Bus requests for an isochronous transaction are queued if received while an asynchronous transaction is currently being processed. Asynchronous transactions are given priority until a current frame time has ended. In one embodiment, at the start of a new frame (which becomes the current frame) any queued isochronous transactions are processed before asynchronous transactions of the current frame are given priority. [Brown, Abstract, Figures 5 and 6]

However, Brown does not teach sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. While Brown teaches a priority scheme, Brown does not teach the claimed priority scheme. Within the Office Action, with regards to a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, all that is stated for the rejection is "some form of control switching circuit has to be interfaced to the ports" without any cite or reasoning. Applicants respectfully view this rejection as improper as there must be justification for any rejection. This is again further proof that more is being read into the prior art than what is actually taught. There is nothing within Brown that teaches a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion.

In contrast to the teachings of Heil, Brown and their combination, the combined IEEE 1394-2000 and ethernet network of the present invention allows devices on the network to operate according to both the IEEE 1394-2000 protocol and the ethernet protocol. The devices within the network are able to send IEEE 1394-2000 isochronous data, IEEE 1394-2000 asynchronous data and ethernet data. Both IEEE 1394-2000 and ethernet devices within the network are coupled to modified hubs (MHubs) to form a local cluster. The MHubs are coupled to an ethernet switch which controls communications between devices in different local clusters. The ethernet switch and the MHubs obey an isochronous interval in which all isochronous data transfers will be allowed. Preferably, on a regular and reoccurring period, the ethernet switch sends an isotick signal to begin the isochronous interval. Alternatively, clocks at all nodes within the network are synchronized to start and stop the isochronous interval at the same time without the need for any one device to transmit the isotick signal. Any bandwidth left after the isochronous interval is then allocated to the traditional ethernet traffic and the IEEE 1394-2000 asynchronous traffic, until the start of the next isochronous interval. As described above, neither Heil, Brown nor their combination teaches a second type of device operating according to only the second protocol. Furthermore, neither Heil, Brown nor their combination teaches a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. Neither Heil, Brown nor their combination teaches a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion.

The independent Claim 8 is directed to a modified hub device configured for coupling between two or more devices operating according to two or more different protocols and a switching device, wherein devices of the first type and devices of the second type communicate with each other. The hub device of Claim 8 comprises a first interface configured for coupling to and communicating with one or more of a first type of device operating according to a first protocol and a second protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the second protocol and a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed

during the first portion and only communications in the second protocol are allowed during the second portion. As described above, neither Heil, Brown nor their combination teaches a second type of device operating according to only the second protocol. Furthermore, neither Heil, Brown nor their combination teaches a third interface configured for coupling to and communicating with the switching device, wherein the switching device sends a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in the first protocol are allowed during the first portion and only communications in the second protocol are allowed during the second portion. For at least these reasons, the independent Claim 8 is allowable over the teachings of Heil, Brown and their combination.

The independent Claim 42 is directed to a network of devices. The network of devices of Claim 42 comprises a switching device including a plurality of ports and a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion, wherein only communications in an isochronous protocol are allowed during the first portion and only communications in an asynchronous protocol are allowed during the second portion and a plurality of modified hub devices each including a first interface configured for coupling to and communicating with one or more of a first type of device operating according to the isochronous protocol and the asynchronous protocol, a second interface configured for coupling to and communicating with one or more of a second type of device operating according to only the asynchronous protocol, wherein the isochronous protocol has priority over the asynchronous protocol and a third interface coupled to a corresponding one of the plurality of ports. As described above, neither Heil, Brown nor their combination teaches a second type of device operating according to only the second protocol. Furthermore, neither Heil, Brown nor their combination teaches a control circuit coupled to the plurality of ports for sending a periodic signal which signals the start of a period having a first portion and a second portion. Neither Heil, Brown nor their combination teaches wherein only communications in an isochronous protocol are allowed during the first portion and only communications in an asynchronous protocol are allowed during the second portion. For at least these reasons, the independent Claim 42 is allowable over the teachings of Heil, Brown and their combination.

Within the Office Action, Claim 43 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Heil in view of Brown and further in view of Lo.

Claim 43 is dependent on the independent Claim 42. As discussed above, the independent Claim 42 is allowable over the teachings of Heil, Brown and their combination. Accordingly, the Claim 43 is also allowable as being dependent on an allowable base claim.

For the reasons given above, Applicants respectfully submit that all of the pending claims are now in condition for allowance, and allowance at an early date would be greatly appreciated. Should the Examiner have any questions or comments, he is encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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